WATERWAY SYSTEMS

OHIO RIVER
Dave Weekly

- Year round traffic has been permitted since the 1929 pool levels stabilization
- Steady growth rate over last 25 yrs- 1.1% projected for next 25
- Commodity movements: 280M tons, 60% coal, some petroleum products; mostly an internal system- not much external trade.
- Average of 106 miles in each leg.
- All infrastructure investments for commodities moved by waterway have been right on river.
- Current model captures about 4000 OD trips.
- 10% of coal is from the west and has a 1500-mile leg. If those movements are removed from the total coal shipments then most coal is moving over a very short leg.
- Tax revenue refers to taxes paid by business utilities, not waterway user tax.
- The 49 coal plants located in Ohio River Basin (ORB) represent 20% of US coal fired capacity. A water location is required for cooling and for cheap transportation.
- ORB coal reserves represent ¼ of the nation's reserves.
- The ORB is not a heavy agriculture area. Most of the small quantities of agricultural shipments are from Cincinnati and south. The Upper Basin does not produce many grain products.
- The Petroleum industry is a significant part of ORB traffic. There are 250 refineries, tank farms, pipelines, etc. There were over 200 M tons shipped in 2000.
- The river can have positive environmental consequences. Reduced emissions may result when commodities are not shipped on other modes. More work needs to be done in this area. The benefits depend on where the problem is located. Rail and water have different affects on different communities.
- Mainstem study: looking at some of the basin improvements.
    - Upper OH has some old locks- 16% over 50 years old (design life) some approaching (60% are 30-50 years)
    - As the older locks hit the design life see more closures.
- Average annual costs for operating the locks include O&M cost, closure delay cost, normal delay cost, and processing time cost. Many different components to add up for total costs.
- We continue to work on modernization activities to make improvements. Working to do the last increment with investment plan.
- Study due out next year with proposed improvements to the Mainstem
- Hydropower benefits not included although some of the dams do have hydropower benefits.
- A great majority of the locks, about 60%, were built more than 30 years ago. What to do when the lock gets old?
    - Fix it as it breaks, just keep patching the breaks. This can result in a loss of reliability over time.
    - Major rehabilitation is meant to restore the reliability. It works as preventative maintenance to prevent future breaks
    - Build a new one (completely replace the lock). Problem with this comes if there is only one lock, then we can't close it down for any period of time because this will shut down the whole system. (As an alternative we can build at a different location. It is costly but helpful because it eliminates the problem of shutting down the system)
- In projects we generally assume that the Corps will continue to maintain navigation at the existing reliability level. This is called the "base condition".
- Incremental cost of new alternative may be very small so the definition of the base condition is very important. The cost of maintaining the existing system could be so expensive that you would not do it.
- Base condition: "fix as fail"- as things break they get fixed.
- Statistics that are cited stating the number of locks that are beyond their design life may just be sound bites. The real issue is the reliability of the locks. Some locks are 80 years old with no signs of failure, while others younger have already shown performance problems.